



# Cyberinfrastructure Working Group

John Helly, SDSC  
Karen Schuchardt, PNNL  
University of California, Los Angeles  
Team Meeting, January 2008

# Outline

- Account Allocations and Status
- CI Proposal Efforts
- Digital Library Progress
- Large-dataset Transposition and Subsetting
- Topics for Breakout on Thursday
- Tsunami of Data: Karen Schuchardt

# Allocations

- New allocation at NERSC
- Existing allocations on Teragrid

# 1,000,000

Fwd: 2008 awards — Inbox

Delete Junk Reply Reply All Forward Print To Do

**From:** Randall David <randall@atmos.colostate.edu>  
**Subject:** Fwd: 2008 awards  
**Date:** January 8, 2008 3:38:25 PM PST  
**To:** Ross Heikes <ross@atmos.colostate.edu>, Celal Konor <csk@atmos.colostate.edu>, Joon-Hee Jung <jung@atmos.colostate.edu>, John Helly <hellyj@ucsd.edu>

---

Begin forwarded message:

**From:** Don Dazlich <dazlich@atmos.colostate.edu>  
**Date:** January 8, 2008 3:54:16 PM MST  
**To:** David Randall <randall@atmos.colostate.edu>  
**Subject:** Re: 2008 awards

'Global cloud modeling', repo m328, was awarded 1,000,000 mpp hours.

Bassi (ibm sp5) requires 6 mpp hours to run 1 hour on one process (charge factor)  
Jacquard (opteron cluster) has a 3.6 charge factor.  
Franklin (cray xt4) has a 6.5 charge factor

One can submit to a low priority queue for half the cost on all these machines (and wait a while most likely)

On Jan 7, 2008, at 6:23 PM, David Randall wrote:

take a look to see how much we really have.

Begin forwarded message:

**From:** Francesca Verdier <fverdier@lbl.gov>  
**Date:** January 7, 2008 2:25:01 PM MST  
**To:** [account-managers@nersc.gov](mailto:account-managers@nersc.gov)  
**Subject:** 2008 awards  
**Reply-To:** [fverdier@lbl.gov](mailto:fverdier@lbl.gov)

Dear NERSC Pls and account managers,

As your award letters stated, DOE had only allocated about half of the time when the letters were emailed. Since then, the offices of



[Logout](#)  
Welcome, John Helly

Home My TeraGrid Resources Documentation Training Consulting Allocations

Accounts and Usage Profile Registered DNs Change Portal Password GSI SSH [Beta] Add/Remove User Community Account Citation Info User Responsibilities

**System Accounts**

Resource	Username	Connect
<b>IU</b>		
login.bigred.iu.teragrid.org	tg-hellyj	<a href="#">Login</a>
<b>NCAR</b>		
tg-login.frost.ncar.teragrid.org	no account	
<b>NCSA</b>		
login-co.ncsa.teragrid.org	jhelly	<a href="#">Login</a>
login-cu.ncsa.teragrid.org	jhelly	<a href="#">Login</a>
tg-login.ncsa.teragrid.org	jhelly	<a href="#">Login</a>
login-w.ncsa.teragrid.org	jhelly	<a href="#">Login</a>
login-abe.ncsa.teragrid.org	no account	
<b>ORNL</b>		
tg-login.ornl.teragrid.org	hellyj	<a href="#">Login</a>
<b>PSC</b>		
tg-login.bigben.psc.teragrid.org	hellyj	<a href="#">Login</a>
tg-login.rachel.psc.teragrid.org	hellyj	<a href="#">Login</a>
<b>Purdue</b>		
tg-login.purdue.teragrid.org	hellyj	<a href="#">Login</a>
<b>SDSC</b>		

**Allocation Usage**

Start Date (YYYY-MM-DD)	End Date (YYYY-MM-DD)	Resource	Project Allocation (SU) Remaining / Awarded	My Usage (SU)	Alloc. Type
<b>Project Title:</b> SDSC DAC: Climate Model Data Subsetting and Transformation on Bluegene <b>Charge No.:</b> TG-ATM070013N <b>Grant No.:</b> ATM070013N <b>Project PI?</b> Yes					
2007-03-15	2008-03-31	bluegene.sdsc.teragrid	26,841 / 30,000	150.0	new
<b>Project Title:</b> Modeling of Global Climate Variability with Super-Parameterization of Clouds <b>Charge No.:</b> TG-MCA07S011 <b>Grant No.:</b> MCA07S011 <b>Project PI?</b> No					
2007-04-01	2008-03-31	datastar-p655.sdsc.teragrid	369,356 / 400,000	0.0	new
<b>Project Title:</b> TeraGrid Roaming: Modeling of Global Climate Variability with Super-Parameterization of Clouds <b>Charge No.:</b> TG-MCA07T011 <b>Grant No.:</b> MCA07T011 <b>Project PI?</b> No					
2007-04-01	2008-03-31	teragrid_roaming	512,272 / 600,000	0.0	new
<a href="#">[User Responsibility Form]</a> Need to cite TeraGrid? <a href="#">Report Security Incident</a>					

# Teragrid Accounting

```
Account: TG-MCA07S011
Title: Modeling of Global Climate Variability with Super-Parameterization
of
Clouds
Resource: datastar-p655.sdsc.teragrid
Local project name on datastar-p655.sdsc.teragrid is CST102
Allocation Period: 2007-04-01 to 2008-03-31
```

Name (Last First) or Account	Total	Remaining	Usage
Helly John	400000 SU	369356 SU	0 SU
Khairoutdinov Marat	400000 SU	369356 SU	30557 SU
Marchand Roger	400000 SU	369356 SU	5 SU
PI-Randall David	400000 SU	369356 SU	0 SU
Singh Tajendra vir	400000 SU	369356 SU	82 SU
Stevens Bjorn	400000 SU	369356 SU	0 SU

```
Account: TG-MCA07T011
Title: TeraGrid Roaming: Modeling of Global Climate Variability with
Super-Parameterization of Clouds
Resource: teragrid_roaming
Local project name on dtf.ncsa.teragrid is kyb
Allocation Period: 2007-04-01 to 2008-03-31
```

Name (Last First) or Account	Total	Remaining	Usage
Heikes Ross	600000 SU	512272 SU	0 SU
Helly John	600000 SU	512272 SU	0 SU
Khairoutdinov Marat	600000 SU	512272 SU	87728 SU
PI-Randall David	600000 SU	512272 SU	0 SU
Singh Tajendra vir	600000 SU	512272 SU	0 SU
Stevens Bjorn	600000 SU	512272 SU	0 SU

--

```
hellyj@magma:/disk3/Radarsat — ssh — 83x46
bash-3.00$ tgsusage --account TG-ATM070013N

Account: TG-ATM070013N
Resource: bluegene.sdsc.teragrid
Local project name on bluegene.sdsc.teragrid is CSD101
Allocation Period: 2007-03-15 to 2008-03-31
```

Name (Last First) or Account	Total	Remaining	Usage
PI-Helly John	30000 SU	26841 SU	150 SU
Koontz Annette	30000 SU	26841 SU	3000 SU
Palmer Bruce	30000 SU	26841 SU	9 SU
Randall David	30000 SU	26841 SU	0 SU
TG-ATM070013N	30000 SU	26841 SU	3159 SU

```
bash-3.00$ tgsusage --account TG-MCA07S011

Account: TG-MCA07S011
Resource: datastar-p655.sdsc.teragrid
Local project name on datastar-p655.sdsc.teragrid is CST102
Allocation Period: 2007-04-01 to 2008-03-31
```

Name (Last First) or Account	Total	Remaining	Usage
Helly John	400000 SU	369356 SU	0 SU
TG-MCA07S011	400000 SU	369356 SU	30644 SU

```
bash-3.00$ tgsusage --account TG-MCA07T011

Account: TG-MCA07T011
Resource: teragrid_roaming
Local project name on datastar.sdsc.teragrid is CST101
Allocation Period: 2007-04-01 to 2008-03-31
```

Name (Last First) or Account	Total	Remaining	Usage
Helly John	600000 SU	512272 SU	0 SU
TG-MCA07T011	600000 SU	512272 SU	87728 SU

```
bash-3.00$
```

# Proposal Efforts

- NSF SDCl pending: Modeler's Toolbox
- NSF MSI: pre-proposal just submitted:  
Community Computing and Data Resource



# CMMAP User Accounts on Teragrid

- Marat Kharoutdinov, SUNY, Stonybrook
- Roger Marchand, University of Wash
- Steve Krueger (to be added)
- Bjorn Stevens, UCLA
- TV Singh, UCLA



# CMMAP Digital Library

[Home](#)

## Login

Administrator login for site management

## User login

**Username:** \*

**Password:** \*

- [Create new account](#)
- [Request new password](#)

UCSD | SDSC

## About

- [About CMMAP](#)

## Navigation

- [Login](#)
- [Search for Data](#)

# Digital Library

A photograph of a rainbow in a cloudy sky. The rainbow is the central focus, arching from the top left towards the bottom right. The sky is a mix of light and dark grey clouds. In the foreground, there are dark silhouettes of palm trees and a street lamp on the left side.



Edit primary links

# CMMAP Digital Library

Home

## About

- About CMMAP

## hellyj

- Create content
- Login
- Search for Data
- My account
- Administer
- Log out

## Search for Data

### Search Parameters

filename:

subject:

keywords:

description:

type:

### Navigation

North:

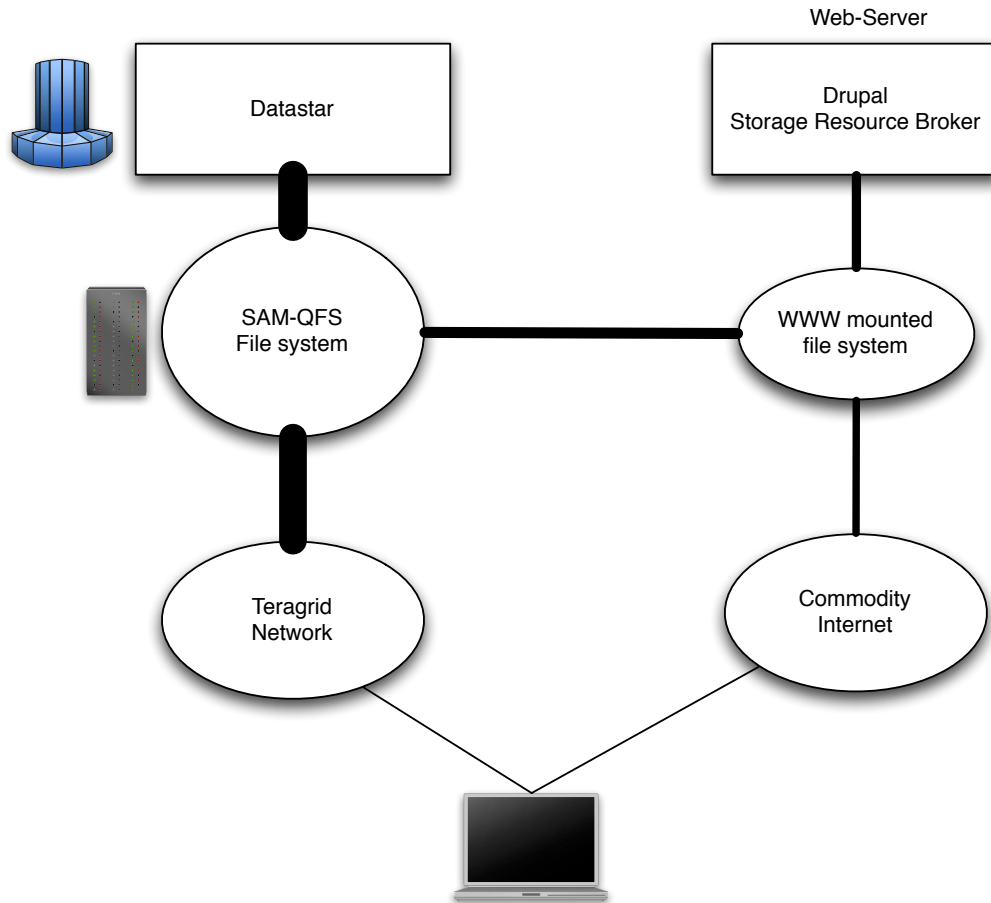
South:

East:

West:

Submit Query

# Digital Library Architecture



# CMMAP Metadata

```
CMMAP_TEST_20071206104317001_20071206104317001_spcam30_4km_32c.cam2.h0
"Manager Email",CMMAP_CanonicalCollection_ArchivistEmail,"hellyj@ucsd.edu"
"Manager Institution",CMMAP_CanonicalCollection_ArchivistInstitution,"CMMAP"
"Manager Name",CMMAP_CanonicalCollection_ArchivistName,"John Helly"
"Manager Phone",CMMAP_CanonicalCollection_ArchivistPhone,"+01 (760) 840-8660"
"Collection Identifier",CMMAP_CanonicalCollection_CollectionIdentifier,"CMMAP_TEST"
"Controlled Vocabulary",CMMAP_CanonicalCollection_ControlledVocabulary,"CMMAP_20071205.cvdict"
"Creator of collection",CMMAP_CanonicalCollection_Creator,"John Helly"
"Thorough Description of collection",CMMAP_CanonicalCollection_Description,"Data"
"Language",CMMAP_CanonicalCollection_Language,"English"
"MTFVersion",CMMAP_CanonicalCollection_MTFVersion,"/users/sdsc/hellyj/cmmap/DLF/metadata/mtf/versions/CMMAP20071206.
"Ontology",CMMAP_CanonicalCollection_Ontology,"CMMAP_Ontology_20071205.owl"
"Publisher of collection",CMMAP_CanonicalCollection_Publisher,"CMMAP"
"General Subject area of collection",CMMAP_CanonicalCollection_Subject,"Models"
"Specific Title of collection",CMMAP_CanonicalCollection_Title,"CMMAP Digital Library Collection "
"ADO Identifier",CMMAP_CanonicalADO_ADDIdentifier,"CMMAP_TEST_20071206104317001_20071206104317001_spcam30_4km_32c.ca
"ADO Version",CMMAP_CanonicalADO_ADDVersion,"20071206104317001"
"Access Control for this object",CMMAP_CanonicalADO_AccessControl,"Undefined"
"Major data block types",CMMAP_CanonicalADO_BlockTypes,"Undefined"
"Children",CMMAP_CanonicalADO_Children,"Undefined"
"Collection Identifier",CMMAP_CanonicalADO_CollectionIdentifier,"CMMAP_TEST"
"Content Filenames",CMMAP_CanonicalADO_ContentFilenames,"spcam30_4km_32c.cam2.h0.1985-11.nc"
"Contributor of this upload",CMMAP_CanonicalADO_Contributor,"Undefined"
"Controlled Vocabulary",CMMAP_CanonicalADO_ControlledVocabulary,"CMMAP_20071205.cvdict"
"Coverage min max lat lon",CMMAP_CanonicalADO_Coverage,"Undefined"
"Original creator of object",CMMAP_CanonicalADO_Creator,"Undefined"
"Date of publication into collection",CMMAP_CanonicalADO_Date,"2007-12-06"
"Description including importance",CMMAP_CanonicalADO_Description,"Undefined"
"Expert Level",CMMAP_CanonicalADO_ExpertLevel,"Undefined"
"Filesize",CMMAP_CanonicalADO_Filesize,"63997396"
"Format MIME type",CMMAP_CanonicalADO_Format,"Undefined"
"Keywords",CMMAP_CanonicalADO_Keywords,"CMMAP,AMIP,SDSC"
"Language",CMMAP_CanonicalADO_Language,"Undefined"
"Latitude End",CMMAP_CanonicalADO_LatitudeEnd,"0.009999"
"Latitude Northernmost",CMMAP_CanonicalADO_LatitudeNorth,"0.009999"
"Latitude Southernmost",CMMAP_CanonicalADO_LatitudeSouth,"0.009999"
"Latitude at Start of object",CMMAP_CanonicalADO_LatitudeStart,"0.009999"
"Longitude Easternmost",CMMAP_CanonicalADO_LongitudeEast,"0.009999"
"Longitude at End of object",CMMAP_CanonicalADO_LongitudeEnd,"0.009999"
"Longitude at Start of object",CMMAP_CanonicalADO_LongitudeStart,"0.009999"
"Longitude Westernmost",CMMAP_CanonicalADO_LongitudeWest,"0.009999"
"MetaData Content Version",CMMAP_CanonicalADO_MIFVersion,"20071206104317001"
"MetaData Template File Version",CMMAP_CanonicalADO_MTFVersion,"/users/sdsc/hellyj/cmmap/DLF/metadata/mtf/versions/C
"Ontology",CMMAP_CanonicalADO_Ontology,"CMMAP_Ontology_20071205.owl"
"Parent",CMMAP_CanonicalADO_Parent,"Undefined"
"Physical storage location",CMMAP_CanonicalADO_PhysicalStorageLocation,"CMMAP_TEST"
"Publisher",CMMAP_CanonicalADO_Publisher,"Undefined"
```

```

CloseDisplay(3) - initialize, open, or close a d
XvQueryAdaptors(3) - return adaptor inform
xmag(1) - magnify parts of the
xrefresh(1) - refresh all or part o
JJH01:- hellyj$ screencapture -i siox.png

```



Portal to SIO Expedition Discoveries

Home

- User Interfaces
- Project Summary

Tools

- Search Tools
- Metadata Tools
- Grid Tools

Resources

- Shipboard Data
- Historical Material
- Geophysical Data
- Educational Data
- Metadata Resources

Education

- Information
- Master Documents

Support

- Help
- Contact Information

About Us

- Collaborators
- People

### SIO WebForm: Access to the Digital Library

#### Search Criteria

**Cruise ID:**

**Collection:**

**Platform:**

**Operator:**

**Funding Agency:**

**Funding Initiative:**

**Investigator:**

**Institution:**

**Port Visited:**

**Start Date:**

**End Date:**

**Region:**

	<i>North</i>	
	<input type="text" value="80"/>	
<i>West</i>		<i>East</i>
<input type="text" value="0"/>		<input type="text" value="360"/>
	<i>South</i>	
	<input type="text" value="-80"/>	

Data Types:

All  Selected

	Docs	Data	Grid	Vis
<b>Reports</b>				
- Cruise	<input type="checkbox"/>			
- QC	<input type="checkbox"/>			
- Weekly	<input type="checkbox"/>			
Underway Geophysical (.mgd77)		<input type="checkbox"/>		
Multibeam Swath			<input type="checkbox"/>	
NetCDF Grid (.grd)			<input type="checkbox"/>	
Visual (.sd)				<input type="checkbox"/>

SSDBviewer v.20070814 Site Survey Data Bank

Results Search Pane Download list

Proposals

- Search All
- A001
- Exp303-306
- Exp306
- Exp313
- Exp314
- Leg125-126

Site Names: All View Site List

Data Type: All

Data Object Type: All

Format: All

Coordinates (decimal degees)

Northern Latitude:

Southern Latitude:

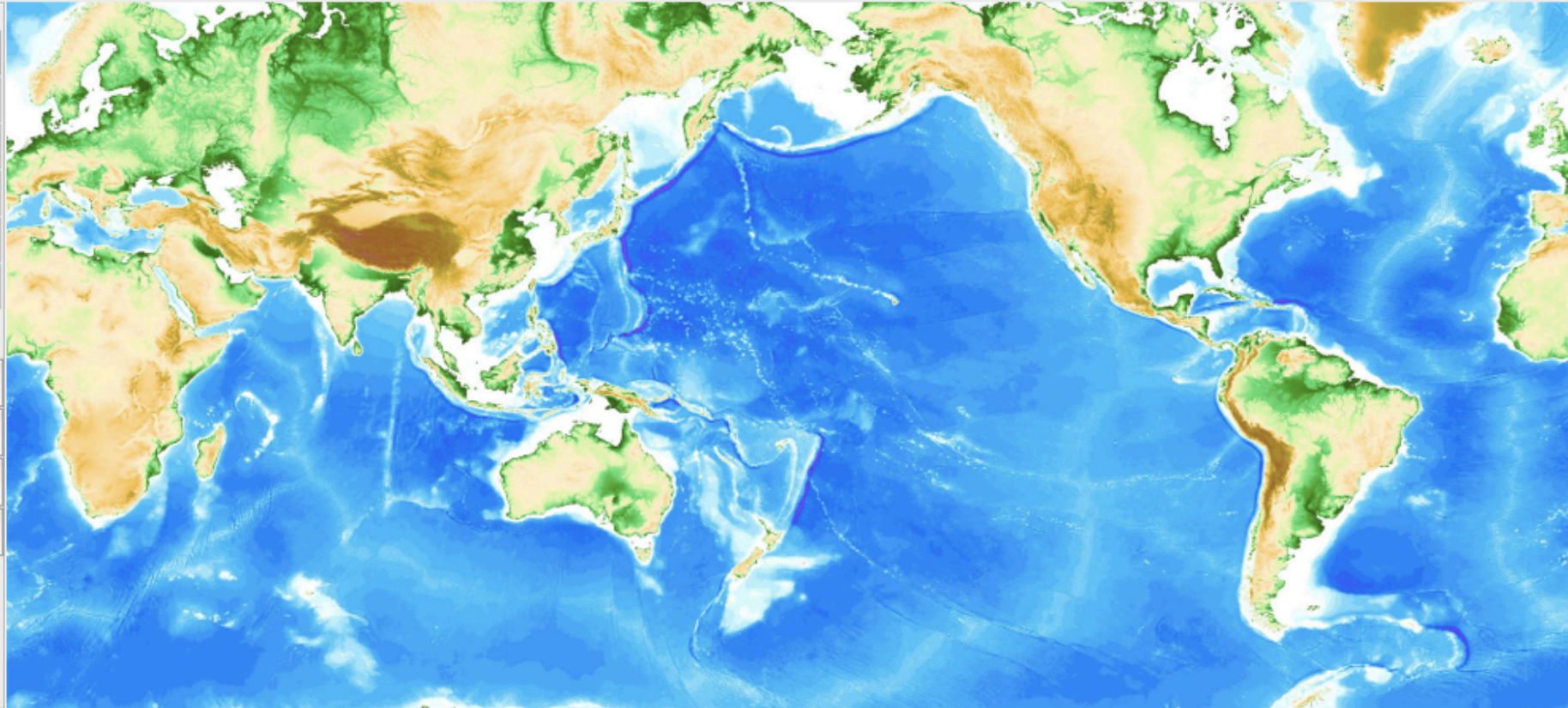
Western Longitude:

Eastern Longitude:

Submit Search Clear

Tools

- Home
- Zoom In
- Zoom Out
- Full Screen
- Layers
- Layers List
- Layers On/Off
- Layers Order
- Layers Style
- Layers Color
- Layers Opacity
- Layers Visibility
- Layers Lock
- Layers Unlock
- Layers Refresh
- Layers Reset
- Layers Close



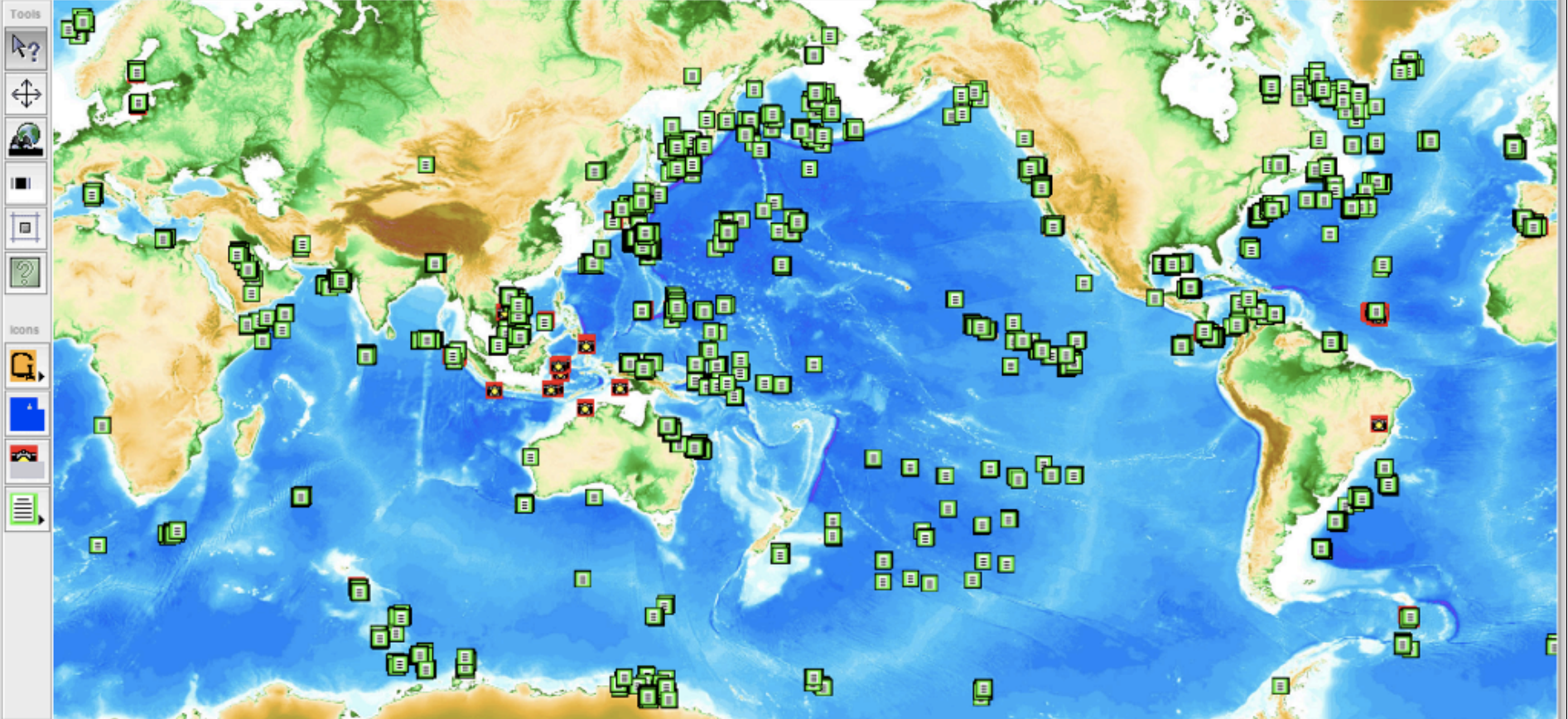
Right-click on any icon for options.

Map: Global Topography Latitude: 69.287 Longitude: 66.462



[X Results](#) [Search Pane](#) [Download list](#)

- Proposals
  - A001
  - Exp303-306
    - Exp306
      - Geology
        - DB0136501.TIF [131131788 bytes] [IODP-SSDB\_Exp306\_20070806185300\_DB0136501.TIF] (.TIF, 131131 KB)
        - DB0136502.TIF [76325804 bytes] [IODP-SSDB\_Exp306\_20070806185307\_DB0136502.TIF] (.TIF, 76325 KB)
        - DB0136503.TIF [75429360 bytes] [IODP-SSDB\_Exp306\_20070806185311\_DB0136503.TIF] (.TIF, 75429 KB)
  - LocationMaps
  - SeismicMultiChannel



Right-click on any icon for options.

Map: Global Topography

Latitude: 66.292 Longitude: -173.769

X Results Search Pane Download list

Proposals

DOTS - Digital Object Transfer System v.20070610

The selected files will be saved to the following location:

/Users/hellyj/DOTS/

Browse

Save

Select: All

	File	Description	Collection	File Type
<input checked="" type="checkbox"/>	IODP-SSDB_Exp306_20070806185300_DB0136501.TIF	DB0136501.TIF [131131788 bytes] [IODP-SSD...	Exp306	data
<input checked="" type="checkbox"/>	IODP-SSDB_Exp306_20070806185300_DB0136501.TIF.mif		Exp306	metadata

Tools



Status

Source File

Status

Size

Ready

0%

Right-click on any icon for options.

Map: Global Topography

Latitude: 66.292 Longitude: -173.769



# CMMAP Digital Library

Home

## About

About CMMAP

hellyj

- Create content
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## Search for Data

### Search Parameters

filename:

subject:

keywords:

description:

type:

### Navigation

North:

South:

East:

West:

Submit Query

Filename	Metadata	Subject	Keywords	Description	Type
spcam30_4km_32c.cam2.h0.1985-11.nc	metadata	Undefined	CMMAP,AMIP,SDSC	Undefined	Undefi
spcam30_4km_32c.cam2.h0.1986-01.nc	metadata	Undefined	CMMAP,AMIP,SDSC	Undefined	Undefi
spcam30_4km_32c.cam2.h0.1985-09.nc	metadata	Undefined	CMMAP,AMIP,SDSC	Undefined	Undefi
spcam30_4km_32c.cam2.h0.1985-10.nc	metadata	Undefined	CMMAP,AMIP,SDSC	Undefined	Undefi
spcam30_4km_32c.cam2.h0.1985-11.nc	metadata	Undefined	CMMAP,AMIP,SDSC	Undefined	Undefi
spcam30_4km_32c.cam2.h0.1985-12.nc	metadata	Undefined	CMMAP,AMIP,SDSC	Undefined	Undefi
spcam30_4km_32c.cam2.h0.1986-01.nc	metadata	Undefined	CMMAP,AMIP,SDSC	Undefined	Undefi



# CMMAP Digital Library

[Edit primary links](#)

Home

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## hellyj

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## Search for Data

### Search Parameters

<b>filename:</b>	<input type="text"/>
<b>subject:</b>	<input type="text"/>
<b>keywords:</b>	<input type="text"/>
<b>description:</b>	<input type="text"/>
<b>type:</b>	<input type="text"/>

### Navigation

<b>North:</b>	<input type="text"/>
<b>South:</b>	<input type="text"/>
<b>East:</b>	<input type="text"/>
<b>Wast:</b>	<input type="text"/>

Submit Query

# Large-dataset Transposition and Subsetting (Krishna Muriki, SDSC)

- parallel code is working and running on Datastar
- soon running on Bluegene
- present the output is just in the form of a text file but netcdf option will be added

```

bash-3.00$ ls
ini                out.1985-09      output_files     pnetcdf.c
makefile           out.1985-10     pnetcdf          testrun
bash-3.00$ cd output_files/
bash-3.00$ ls
filelist           outHCLDAREA     outSPDQ          outTREFHT        outcrm_y
outCLDHGH         outHEIGHT       outSPDQC        outTS            outcrm_z
outCLDLLOW       outICEFRAC      outSPDQI        outTSMN         outdate
outCLDMED        outICLDLWP      outSPDT         outSMX          outdate_written
outCLDTOT        outLANDFRAC     outSPMC         outTTEND        outdatesec
outCLOUD         outLCDAREAD     outSPMCDN       outU            outgw
outCLOUDR        outLHFLX        outSPMCUDN      outUU          outhyai
outCLOUDTOP      outLHFLXOI     outSPMCUP       outV            outhyam
outCLOUDY        outLWCF         outSPMCUUP      outVD01        outhybi
outDCQ           outMCLDAREAD   outSPPFLX       outVQ          outhybm
outDPRES         outMEANTOP     outSPQC         outVT          outilev
outDTCOND        outMEANTAU     outSPQG         outVU          outisccp_prs
outDTH           outMEANTTOP    outSPQI         outVV          outisccp_prstau
outDTV           outOCNFRAC     outSPQPEVP      outZ0M        outisccp_tau
outFICE          outOMEGA       outSPQPFFALL    outZ3          outlat
outFISCCP1      outOMEGAT     outSPQPFLX      out_CLDHGH     outlev
outFLNS          outP0          outSPQPSRC      out_CLDLLOW    outlon
outFLNSC        outPBLH       outSPQPTR       out_CLDMED     outmdt
outFLNSOI       outPHIS       outSPQR         out_CLDTOT     outnbdate
outFLNT         outPRECC      outSPQS         out_CLOUD      outnbsec
outFLNTC        outPRECL      outSPQTFLEX     out_CLOUDY     outndbase
outFLUT         outPRECSC     outSPQTLS       out_CONCLD    outndcur
outFLUTC        outPRECSH    outSPQTTR       out_FISCCP1   outnlon
outFLWDS        outPRECSL    outSPTLS        out_FLNS       outnsbase
outFLWDSC       outPRES       outSRFRAD       out_FLUT       outnscur
outFSDS         outPS         outSWCF         out_FSDS       outnsteph
outFSDSC        outPSL       outT            out_FSNS       outntrk
outFSNS         outQ          outTAUX         out_FSNTOA     outntrm
outFSNSC        outQFLX      outTAUX_CRM     out_LWCF       outntrn
outFSNSOI       outQRL       outTAUY         out_MNPTOP     output_file
outFSNT         outQRS       outTAUY_CRM     out_MNTAU      outtime
outFSNTC        outRELHUM    outTCLDAREAD   out_MNTTOP     outtime_bnds
outFSNTOA       outSHFLX     outTGCLDIWP    out_QRL        outtime_written
outFSNTOAC      outSHFLXOI   outTGCLDLWP    out_QRS        outwnummax
outFSUTOAC      outSNOWHICE  outTIMINGF     out_SWCF
outFSUTOAC      outSNOWHLND  outTMQ         out_TCLDAR
outGCLDLWP      outSOLIN     outTPHYSTND    outcrm_x
bash-3.00$

```

```

e300      16384 Jan 03 23:01 .
e300      16384 Jan 02 22:38 ..
e300      16384 Jan 03 21:16 ini
e300          316 Jan 03 20:27 makefile
e300      16384 Jan 02 22:28 out.1985-09
e300      16384 Jan 02 22:28 out.1985-10
e300      16384 Jan 02 22:39 output_files
e300     345589 Jan 03 23:01 pnetcdf
e300      20902 Jan 03 23:01 pnetcdf.c
e300      16384 Jan 03 23:02 testrun

```

```

bash-3.00$ ls
ini          out.1985-09  output_files pnetcdf.c
makefile     out.1985-10  pnetcdf     testrun
bash-3.00$ cd output_files/

```

```

bash-3.00$ ls
filelist      outHCLDAREA      outSPDQ          outTREFHT        outcrm_y
outCLDHGH     outHEIGHT        outSPDQC         outTS            outcrm_z
outCLDLLOW    outICEFRAC       outSPDQI         outTSMN          outdate
outCLDMED     outICLDLWP       outSPDT          outTSMX
outdate_wrtten
outCLDTOT     outLANDFRAC      outSPMC          outTTEND         outdatesec
outCLOUD      outLCLDAREA      outSPMCDN        outU             outgw
outCLOUDR     outLHFLX         outSPMCUDN       outUU            outhyai
outCLOUDTOP   outLHFLXOI       outSPMCUP        outV             outhyam
outCLOUDY     outLWCF          outSPMCUUP       outVD01          outhybi
outDCQ        outMCLDAREA      outSPPFLX        outVQ            outhybm
outDPRES      outMEANPTOP      outSPQC          outVT            outilev
outDTCOND     outMEANTAU       outSPQG          outVU            outisccp_prs
outDTH        outMEANTTOP      outSPQI          outVV
outisccp_prstau
outDTV        outOCNFRAC       outSPQPEVP       outZOM           outisccp_tau
outFICE       outOMEGA         outSPQPFALL      outZ3            outlat
outFISCCP1    outOMEGAT        outSPQPFLX       out_CLDHGH       outlev
outFLNS       outP0            outSPQPSRC       out_CLDLLOW      outlon
outFLNSC     outPBLH          outSPQPTR        out_CLDMED       outmdt
outFLNSOI    outPHIS          outSPQR          out_CLDTOT       outnbdate
outFLNT       outPRECC         outSPQS          out_CLOUD        outnbsec
outFLNTC     outPRECL         outSPQTFLX       out_CLOUDY       outndbase
outFLUT       outPRECSC        outSPQTLS        out_CONCLD       outndcur
outFLUTC     outPRECSH        outSPQTTR        out_FISCCP1     outnlon
outFLWDS     outPRECSL        outSPTLS         out_FLNS         outnsbase
outFLWDSC    outPRES          outSRFRAD        out_FLUT         outnscur
outFSDS      outPS            outSWCF          out_FSDS         outnsteph
outFSDSC     outPSL           outT             out_FSNS         outntrk
outFSNS      outQ             outTAUX          out_FSNTOA       outntrm
outFSNSC     outQFLX          outTAUX_CRM      out_LWCF         outntrn
outFSNSOI    outQRL           outTAUY          out_MNPTOP       output_file
outFSNT      outQRS           outTAUY_CRM      out_MNTAU        outtime
outFSNTC     outRELHUM        outTCLDAREA      out_MNTTOP       outtime_bnds
outFSNTOA    outSHFLX         outTGCLDIWP      out_QRL
outtime_wrtten
outFSNTOAC   outSHFLXOI       outTGCLDLWP      out_QRS          outwnummax
outFSUTOA    outSNOWHICE      outTIMINGF       out_SWCF
outFSUTOAC   outSNOWHLND      outTMQ           out_TCLDAR
outGCLDLWP   outSOLIN         outTPHYSTND      outcrm_x
bash-3.00$

```

```

35: Name: CLDHGH
Type: NC_FLOAT
natts: 3
ndims: 3          time lat lon
nelms 8192
<SIZE> in bytes: 32768
Array of float values (up to at most -1-1):
0: 0.0000000000000000
1: 0.0000000000000000
2: 0.0000000000000000
3: 0.0000000000000000
4: 0.0000000000000000
5: 0.0000000000000000
6: 0.0000000000000000
7: 0.0000000000000000
8: 0.0000000000000000
9: 0.0000000000000000
10: 0.0000000000000000
11: 0.0000000000000000
12: 0.0000000000000000
13: 0.0000000000000000
14: 0.0000000000000000
15: 0.0000000000000000
16: 0.0000000000000000
17: 0.0000000000000000
18: 0.0000000000000000
19: 0.0000000000000000
20: 0.0000000000000000
21: 0.0000000000000000
22: 0.0000000000000000
23: 0.0000000000000000
24: 0.0000000000000000
25: 0.0000000000000000
26: 0.00199652800802
27: 0.001813272014260

```

# Topics for CIWG B/O Thursday Morning

- More computer users needed
- Graduate students encouraged to learn to use these resources
- Discussion on queries for digital library searches
- Planning for August CMMAP meeting

Karen Schuchardt





# CIWG Breakout Reporting

# Participants

- Kelley Wittemeyer CSU
- Mark Branson CSU
- Karen Schuchardt PNNL
- Anning Cheng ASU
- Joon-Hee Jung CSU
- Mikil ???? / NCAR
- Joanna ???? /
- Peter Blossey / ???
- Jason Cole / U.Toronto
- Don Dazlich / CSU
- Dave Randall / CSU
- Ross Heikes / CSU
- John Helly / UCSD

# Action Items for CIWG

- Paper on techniques for coping with data tsunami (John, Karen)
- Planning for Computing Workshop (John, Scott, Mike P.)
- Allocation Requirements Update (Table, Schedule) (John H.)
- Establish desirements for model output products (Chinhoh, Marat, Karen, Mike P., John H.)

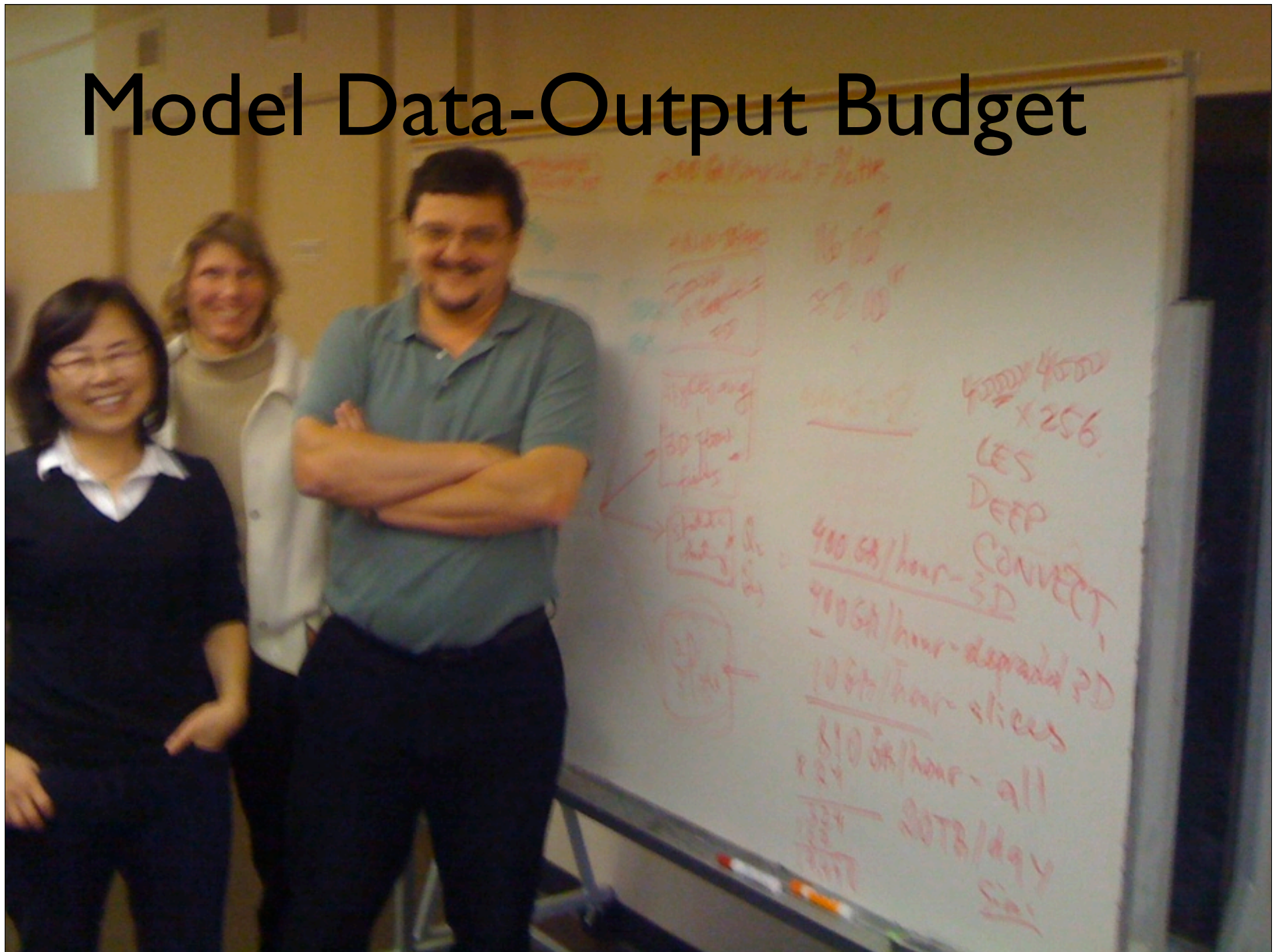
# Allocation Planning

- New user requirements for next proposal cycle
  - User allocation matrix: machine, application, user (Helly)
  - Jason Cole
  - K. Schuchardt
  - ++?
- Teragrid (Mar, 2008 + extension to Sep 2008)
  - Datastar (IBM SP2): 600,00 su
    - MMF
  - Roaming: 600,000 su
    - Bluegene: SAM
- NERSC (May-June until Dec 31)
  - BASI (SP5), Franklin (Cray XT4), Jacquard (Opteron cluster)
- NCAR/CISL (deadline Mar, Randall proposal, GCRM)
- NCAR/CSL (deadline April)
- Argonne (K. Schuchardt, Data)
- NCSA (201 I, small grants now to prepare to use)

# Data for Digital Library

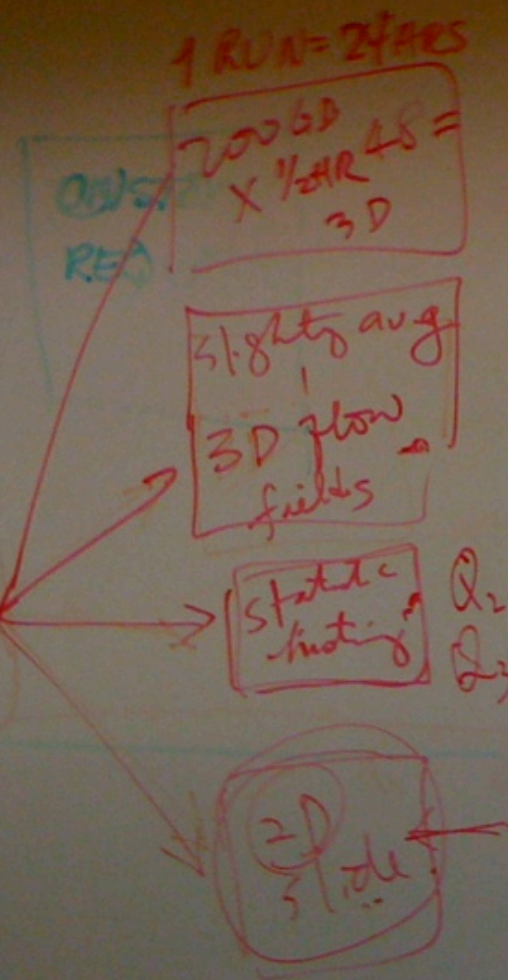
- MMF
  - AMIP (~200 GB, Marat)
  - aqua-planet climate sensitivity (~100 GB)
- MMF 3D Tests
  - with momentum transport (~100 GB)
  - w/o momentum transport (~100 GB)
- SAM Hi-Res (to be run)
  - LBA case (400 GB, Marat)
  - Large domain LES (~2TB)

# Model Data-Output Budget



200 GB/snapshot = 1/2 hr

LES  
Model  
Data-  
Output  
Budget



$16 \cdot 10^9$   
 $\approx 2 \cdot 10^{10}$   
 $4 \times 4 \times 2 = 32$

$4500 \times 4500$   
 $\times 256$

LES  
DEEP  
CONVERT  
3D

400 GB/hour - 3D  
 400 GB/hour - degraded 3D  
 10 GB/hour - slices  
 810 GB/hour - alt  
 x 24 = 20TB/day

$$\begin{array}{r} 324 \\ 162 \\ \hline 19440 \end{array}$$

Sim

# Visualization

University of Melbourne has constructed a massive 96 million pixel "OptIPortal" visualization wall - known affectionately as the 'OziPortal' - constructed from twenty-four 30-inch LCD screens.





# Student Workshop Planning

- Development tricks of the trade
  - debugging, parallelism, portability
  - compilers, test design, efficiency benchmarking
- 3rd party tools, viz tools, data transformation, representation
- best practices for coding, I/O, nomenclature
- Mike Pritchard ([mpritchard@uscd.edu](mailto:mpritchard@uscd.edu)), 'Go-to' guy for graduate student coordination